

T-TESS Observation Evidence Sheet

8th Grade Science

| Domain 2: Instruction | | |
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| Dimension | Evidence | Rating |
| 2.1 Achieving Expectations | <ul style="list-style-type: none"> ● The teacher sets the academic expectations of learning the objective (convection).0:14 Warm-up: “What do you know about convection? T: This is something you’re not familiar with. The new learning obj: You will recognize that the sun provides energy that drives convection within the atmosphere producing winds and ocean currents. ● 2:40 Connection was made to prior learning: earth’s tilt, how it revolves, seasons, and lunar phases. During the lab, students were monitored. Teacher asked, “What’s supposed to happen?” “Is that what you see?” “Pour it out and start over.” “Joshua observed that red is sinking.” “Sarah, explain why.” Sarah: “Red fluid is cooling down so it starts going down.” Teacher: “Good. So what temperature is it going to reach?” Student could not answer. “Nathan, help her out.” Nathan answered, “room temperature.” ● 4:32 Color scheme for notes about warm and cold. T: you will use this later. ● Questioning and discussion reinforced warm rises and cold sinks. ‘How did temperature affect flow?’ 27:44“Where did the warmth go?” “Where did cold liquids go?” “Did low temp sink or float?” “If you put float, change to sink.” Students used a lava lamp to describe what convection does. The LO was posted and read to the class after warm-up and introduction of vocab: convection. Some students seemed to already know the concept of convection based on their responses. ● 31:51 Video reinforced warm rises/cold sinks and direct sunlight at the equator. “What type of sunlight does the equator always receive?” Ramsey: “Direct.” T: So is it always warm or cold?” T: Kiley, warm fluids would always___?” S: Rise. Note page had a diagram with arrows to and from the North Pole and South Pole. T. paused the video several times to reinforce concepts. ● Anticipated: problems with pipettes (upright, release slowly, wait for it to mix). Direction of the arrows from the equator to the south pole would be | Proficient |

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| | <p>opposite. The teacher and students worked together using the document camera, calling on students</p> <ul style="list-style-type: none"> ● T utilizes instructional strategies/tools such as lecture, interactive board, video, lab experiment, and class discussion to reinforce learning and ascertain mastery of the academic objective. She anticipated student misunderstanding and provided learning experiences such as a lab and video to demonstrate the new learning objective. She had the students create hypotheses that would either be proven or disproved. ● The teacher did circulate the room during the lab/activity. Her circulation appeared to be spontaneous and unplanned without documentation of her observations. There was no documentation of student mastery of the lab, though she did invite the students to conduct the lab again if they needed to, which provides evidence that she is persisting to support student mastery for at least some students. ● Students had some opportunity to take initiative by conducting the lab on their own with a partner and making a choice to talk to a neighbor or think independently about their prediction/hypothesis for lab 4. She also had a conversation with a student about redoing an assignment and stated that she wanted to go over some of the questions with him. ● There was no structure provided to address student mistakes through an intentional path of strategic monitoring. Exit ticket: What is the main source of energy that drives convection in the atmosphere and ocean? 47:17 M/C 91% got correct using clicker app. Connected back to LO | |
| <p>2.2 Content Knowledge and Expertise</p> | <ul style="list-style-type: none"> ● 1:20 The sentence used as the definition of convection is a description of the lab, an example of convection rather than a definition. "Convection is the rising of warm water and the sinking of cold water." A more precise, scientific definition would be appropriate for 8th grade level and could inhibit student application of the knowledge to other contexts beyond the lab used for this lesson. ● 5:02 T. conveyed a depth of knowledge while explaining the lab, the video presentation as well as explaining the convection currents. Due to the fact the material was new to the students, the teacher guided the students through the lab experiment that showed them how convection works. | <p>Proficient</p> |

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| | <ul style="list-style-type: none"> Teacher referred to chemistry when introducing LO. “The lava lamp and precipitate is like from chemistry. The precipitate rises and it gets cooled, then it sinks back down where it gets warmed and rises again.” Anticipated: problems with pipettes (upright, release slowly, wait for it to mix). 36:00 Direction of the arrows from the equator to the south pole would be opposite. (During guided instruction, the teacher mistakenly colored one arrow red instead of blue in the southern hemisphere. Mistakes caught and acknowledged.) Through the lab experiment, Ss were able to think practically and analytically by completing the lab experiment and conversing with their table mate. She integrates learning with other learning disciplines such as social studies as she connects convection to the North and South Poles, the Equator as well as making real-world connections where students can share with their parents that the wind on their face is an example/evidence of convection. She anticipated a possible misunderstanding when showing the application of the concept of convection to the northern and southern hemispheres and effectively clarified the point. She also said, "You're probably wondering because you thought fluids were liquids. It's not - it's liquids, gasses which includes wind" but missed other opportunities throughout the lesson to support student understanding of the concept and lacked clarity in her introductory explanation of what convection is. The students use different types of thinking as demonstrated through creating hypotheses, drawing conclusions from the experiment results, dialogue with partners as they proceed through the experiment, and multiple choice questions about connection. Students used analytical (hypothesis, lab results, follow-up questions, note taking) and practical thinking (lava lamp, two-story house). Content was taught using various methods: direct instruction, note taking, video, lab with multiple examples, and scaffolding and she made connections to Unit 3 (tilt, revolutions, lunar phases) reinforced with video. | |
| 2.3 Communication | <ul style="list-style-type: none"> T. often talks over Ss, while they are talking with a peer, as well as gives information or directions without having the attention of all Ss. The teacher often begins talking before all (or the majority) of the SS are in their chairs | Developing |

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| | <p>and ready to listen, engage and learn. This happens multiple times throughout the lesson.</p> <ul style="list-style-type: none">● 11 minutes spent going over directions.● There were no “callbacks” to pause the lesson or gain the attention of all Ss. In isolation, her verbal and written communication are free from errors, but the delivery isn’t clear and step-by-step. As a result, the T needs to repeat her directions multiple times, concerning gathering aprons, pipet usage, and lab procedure.● She did not complete the modeling of the lab as she stated, requiring further repetition and clarification throughout the lesson. There is little● Questions are at the remember and understand level. She asked probing questions “What do you girls think? What do you mean by trade-off? Are we going to tilt the pipettes? What do you see when the liquids mix? Joshua noticed that the red was going down. Sara, why? In a two-story house or building, is it warmer or cooler on the second floor? Why?”● Students had little or no opportunity to read and process the lab sheet before the lab without teacher interruption. The teacher regularly monitors by walking around and monitors the Ss engagement and learning by asking them “What is your hypothesis?” “Are you done with your work” “What did you notice about the colors?”. “if you didn’t get it correct, you’ll need to do it again”.● She recognizes when a student becomes confused or misunderstands because she has interacted with them. Students were called on randomly.● They worked together in pairs on the lab activity. T: In partners, you are going to do a convection lab. What do you think is going to happen? Make a prediction first. That is your hypothesis.● T. provided some opportunity for dialogue and clarification. "What do you think is going to happen when you put very hot and very cold liquid into tap water?" What will happen when you take hot liquid and cold liquid and put it into your beaker in tap water? While the teacher and aide monitored lab work, the student asked about where to draw his observations. T: That’s okay. You still have room to draw. This is a second drawing. That’s ok. You can just add an arrow to the bottom. All students responded to the exit ticket at the end of class. | |

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| | <ul style="list-style-type: none"> Teacher anticipated possible missteps with the lab activity (pipettes held upright, liquids released slowly) and direction of arrows to the south pole to the equator but her primary strategy was frequent verbal reminders (don't tilt) | |
| <p>2.4 Differentiation</p> | <ul style="list-style-type: none"> It was not apparent that the lesson was scaffolded or adapted to student needs or that Ss were working at their "level". Every Ss had the same journal sheets and lab reports based on what was observed. There was an aide in the room to support particular Ss. There are some questions and answering, the use of Clickers, the Lab experiment, the video, convection current worksheet. However, there is little to no evidence of her monitoring the quality of SS participation as she does not use any strategies for full class involvement, callbacks, etc. Rather, she calls on individuals throughout the lesson. Students were called on randomly. They worked together in pairs on the lab activity. There was some assignment of partners that may or may not have been based on student need. It appeared to be random. There were frequent reminders of keeping the pipettes vertical which may have been based on individual student needs or the needs of the group as a whole. She allowed students to perform the lab again if they needed another attempt but did not provide additional support, clarification, or guidance. The teacher addressed a student who asked about retaking a test and communicated that she wanted to work with them on the questions they struggled with. All students responded to the same exit ticket at the end of class. | <p>Developing</p> |
| <p>2.5 Monitor and Adjust</p> | <ul style="list-style-type: none"> The teacher asked individual students to respond to questions, but no noticeable adjustment was made to instruction or activities. She invites input and feedback from the class, yet not everyone participates. She calls on individual Ss based on her preferences (no pull cards or sticks or an app). She did not pause or stop or reteach at any point, she went through the lesson steps. She skims and scans the room and then begins talking over the Ss while they are writing in their journals, or completing the lab experiment. The teacher moved around the room throughout the independent practice portions of the lesson and seemed to be monitoring student engagement. | <p>Developing</p> |

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| | <p>Students had activities to do (i.e. warm up to complete, lab paper to draw the lab results and to review questions, exit ticket). She monitored for engagement by circulating throughout the room but did not document her observations.</p> <ul style="list-style-type: none">● She asked questions of students but did not provide time to think or discuss. She utilized student performance during the lab activity to monitor and adjust instruction. She also had students redo the lab experiment when instructions were not followed.● T checks for understanding through observation and reflective questioning, such as “What do you think is going to happen? Can I have your attention? Why is the red going down?” Students were randomly called on throughout the lesson.● During the lab activity, students were given an opportunity to start over. Students were told to correct the lab sheet: “If you put float, change to sink.” Teacher facilitated and monitored during lab activity: “Did you get the back done? Are you doing ok? Are you tired? Try to answer question 1 while your liquids are mixing.” | |

Domain 3: Learning Environment

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| 3.1 Classroom Environment, Routines and Procedures | <ul style="list-style-type: none"> Students entered the room, picked up materials (except one), and started to warm up. Students depended on the teacher to tell them what to do, rather than reading the guidance, discussing with their partner, and taking action. i.e. when they were told to get aprons, pipettes, et. al. everything was teacher-directed and instructional minutes were lost. It was close to 8 minutes from apron dissemination to the actual engagement in the lab activity. 34:00 The teacher referenced the lab folder which students accessed and used which appears to be an effective system for students to organize their notes. There were no observable systematic procedures implemented such as pairing systems, material distribution, and clean up, and there was time lost on these activities in this lesson. The teacher was deliberate and specific in some steps: “Don’t tilt the pipette, release slowly into the water, The student-centered/directed aspect of learning was not observed. Transitions between activities were primarily teacher-directed. Teacher instructed pairs to manage supplies. Teacher: “One of you put the aprons away and one of you dump the beakers out and we will move on.” Students were repeatedly reminded to keep pipettes upright and not tilted while filling with hot liquid. This was repeated at least 15 times in the lesson. The directions were needed, but students relied upon the teacher to give reminders rather than a routine or procedure that would enable students to direct their work and learn from the process. Students carried pipettes back to tables with hot water in them. The hot (on a hot plate) and cold water were located at the front of the room. The students actively participate in groups and manage supplies and equipment with specific teacher direction. The classroom was safe and organized with materials well prepared for the lesson. Students were given specific duties relating to the experiment duties and conducted with relatively few minor mishaps. State safety procedures were observed and followed by the students. | Developing |
| 3.2 Managing Student Behavior | <ul style="list-style-type: none"> Students entered the room, picked up materials (except for one), and started the warm-up. Out of 12 pairs, 5 teams were consistently off task. If a student didn’t follow a procedure, she calmly directed them which created a learning environment with little major interruptions. | Proficient |

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| | <ul style="list-style-type: none"> ● The aide in the room circulated more than the T which may have been part of the teacher's overall system. The aide appeared to be answering questions or taking care of any behaviors along the way. Teacher instructed pairs to manage supplies. Teacher: "One of you put the aprons away and one of you dump the beakers out and we will move on." Aprons were used to prevent staining of clothes. | |
| 3.3 Classroom Culture | <ul style="list-style-type: none"> ● When the teacher interacts with an individual Ss or multiple students she has a kind tone and is encouraging when mistakes happen or one is accurate. Ss respond respectfully to the T when asked to do a particular task. ● She asked a student if he was okay and if he was tired. When a student gave the "perfect" answer to the warm-up question, the teacher said, "Do you want to teach? Come on up – let's trade places". During the note-taking, she colored in the wrong arrow and acknowledged her mistake saying, "I messed up. See, I make mistakes, too. I'm human." ● Before calling on Hailey, she asked, "Are you ready?" When the student answered correctly but timidly, the teacher said, "Good! Be confident!" Students who did not have materials were treated with respect and given or allowed to get the necessary papers. ● The Ss look to be respectful of one another, in that, they are not yelling out or speaking ill of each other, there were no observed incidents with disrespectful interactions. | Proficient |